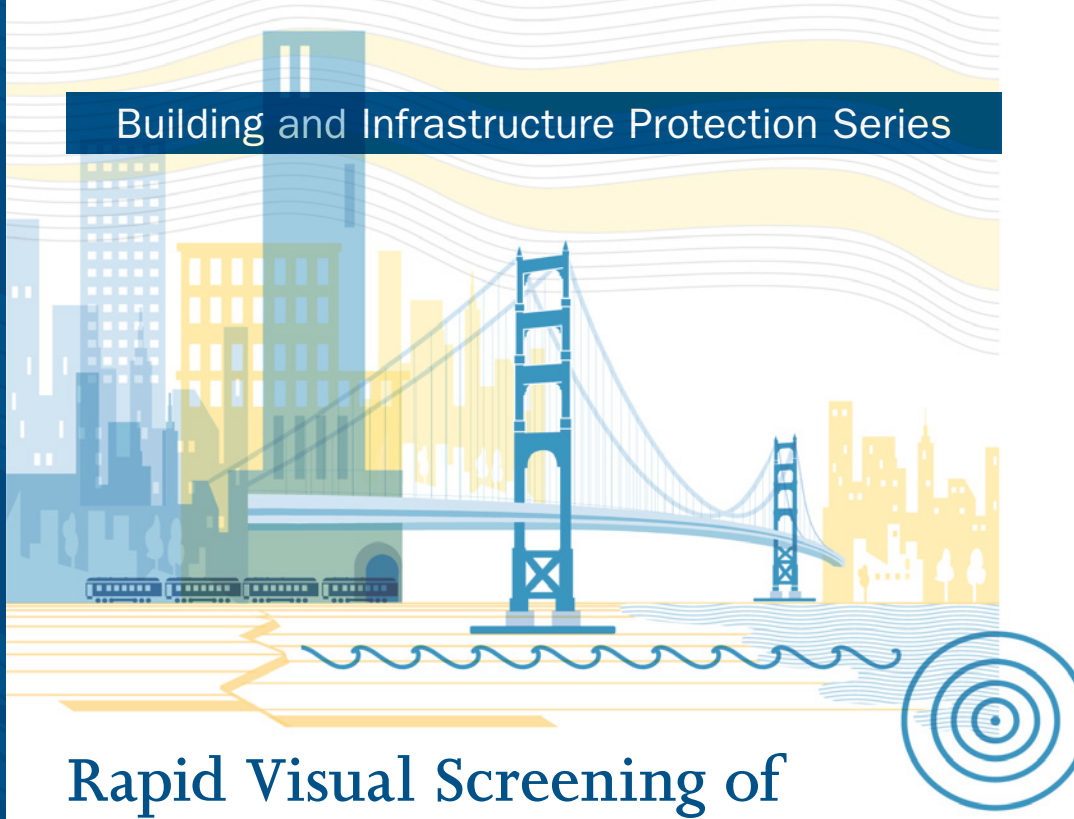
Homeland Security

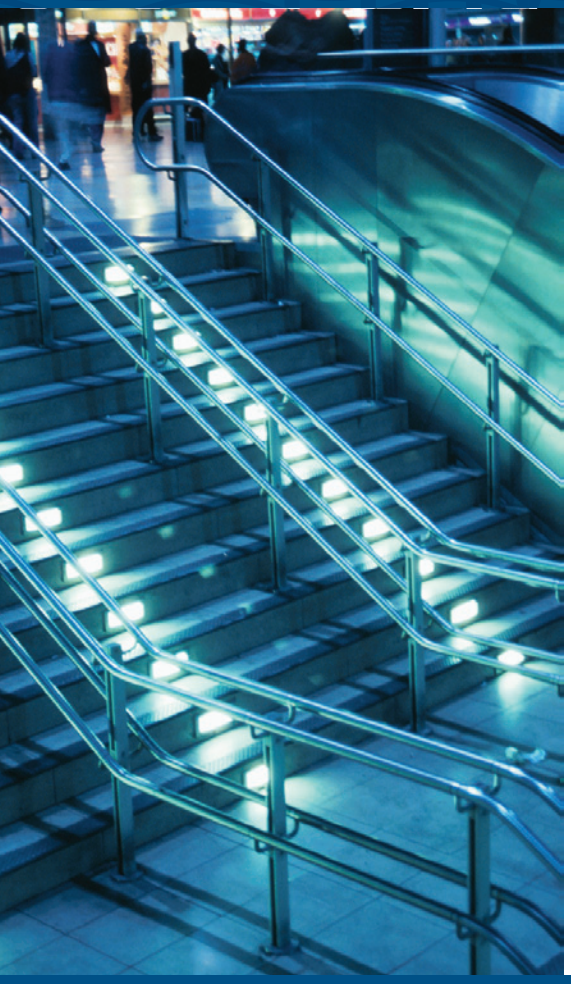
Science and Technology

Building and Infrastructure Protection Series



Rapid Visual Screening of Tunnels and Mass Transit Stations

A rapid visual screening procedure has been developed to assess the risk to a tunnel or transit station due to a terrorist attack that has the potential of causing catastrophic losses (fatalities, injuries, damage, and business interruption).



The rapid visual screening procedure was designed using the methodology from FEMA 455, *Handbook for Rapid Visual Screening of Buildings to Evaluate Terrorism Risks*. Two distinct forms of the rapid visual screening procedure are available: one for tunnels and one for transit stations. The purpose of the procedure is to determine the risk of a tunnel or transit station by evaluating the threat, consequences, and vulnerability for specific station/tunnel characteristics. Different risk scores can be used to prioritize tunnels and transit stations for further evaluation or mitigation.

Rapid visual screening is intended to be a simple and quick tool for obtaining a preliminary risk assessment rating. It is meant to be used by transit authorities, law enforcement agencies, emergency managers, facility managers, engineers, and architects. The screening process can be conducted by one or two screeners and completed in a few hours. Data collected from the screening can be transferred to a electronic database to compute the risk score and store records. Information obtained from the visual inspection can be used to support higher level assessments and mitigation options by experts.

GOAL

The goal of the IRVS procedure is to determine the level of risk to a building from natural and manmade hazards.

PROCEDURE

1. Assemble team and mobilize.
2. Fill out pre-field data on Data Collection Form.
3. Perform on-site field evaluation of exterior features, publicly accessible internal areas, and other internal areas accessible only with permission.
4. Complete Risk Scoring Sheet.
5. Interpret and use results.

Rapid Visual Screening Key Station/Tunnel Characteristics



CONSEQUENCE RATING

Definition: The degree of debilitating impact that would be caused by the incapacity or destruction of the tunnel or mass transit station. Characteristics evaluated for this category are primarily related to use, occupancy, and importance. The consequence rating is from the owner/operator perspective.

- Economic impact of physical loss
- Number of vehicles/trains per day
- Target density
- Replacement values (costs)

THREAT RATING

Definition: The likelihood or potential of a terrorist attack that will cause loss or damage to the tunnel or mass transit station. Characteristics evaluated for this category are similar to those for the consequence rating; however, the threat rating is from the perspective of the terrorist.

- Significance of station
- Protective deterrence measures
- Locality

VULNERABILITY RATING

Definition: The likely damage and loss to the tunnel or mass transit station resulting from a terrorist attack. Criteria evaluated for this category include features of the station or tunnel that could enhance or detract the overall performance under terrorist attack.

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Site

- Elevation
- Approaches
- Concourses

Architecture

- Service entrances
- Retail space
- Plaza size/public areas

Ventilation Systems

- Degree of protection
- Ventilation hardware exposure

Fire Systems

- Quality of systems

Operations

- Power supply
- Surveillance and control
- Public notification and awareness

Structural

- Construction materials
- Overall structural conditions

Non-Structural

- Security booths
- Barriers and curbs

Physical Security

- Blast threat detection and security
- Chemical, Biological, Radiological and Explosives threat detection and security

Cyber

- Security of communications, signals, and power systems

Operational Security

- Emergency plans
- Security plans